IN THE SPECIFICATION:

Please substitute the following abstract for the abstract in the application:

A method, [[a]] system, and [[a]] computer program product for organizing a set of nodes into a minimum number of connected clusters of bounded size in a wireless transmission system, wherein the method comprises ~~is disclosed. The method comprising steps of;~~ using of bits in packets used in the initial stages of the device discovery procedure, to include information relating to a state of device discovery to achieve the ~~said~~ the separation of the nodes into those in ~~said~~ the transmit-state and ~~said~~ the receive-state; defining a Master-designate among ~~said~~ the nodes through a statistical procedure and defining remaining nodes as a Slave-designate; defining a cluster including ~~said~~ the Master-designate and at least one ~~said~~ the Slave-designate, wherein ~~said~~ the Slave-designate continuously scans for ~~said~~ the inquiry message transmitted from ~~said~~ the Master-designate and ~~said~~ the Slave-designate transmits ~~said~~ the inquiry response to ~~said~~ the Master-designate.

means for setting parameters in the procedure for device discovery to achieve a separation of the nodes into those in a transmit-state and a receive-state;

means for defining a Master-designate among said nodes through a statistical procedure and defining remaining nodes as a Slave-designate; and

means for defining a cluster including said Master-designate and at least one said Slave-designate, wherein said Slave-designate continuously scans for an inquiry message transmitted from said Master-designate and said Slave-designate transmits an inquiry response to said Master-designate upon receiving said inquiry message to establish a connection between said Master-designate and said Slave-designate,

wherein said bits in said packets include information selected from the group consisting of numbers of responses received by said node by a predetermined period, numbers of said nodes included in said cluster, whether or not said node ~~transmitted~~ transmitting said inquiry response is included in said cluster, and whether or not said node transmitting said inquiry response is said Master-designate.

13. (Currently Amended) A system for organizing a set of nodes into a minimum number of connected clusters of bounded size in a wireless transmission system, said system comprising:

means for using of bits in packets used in the initial stages of a device discovery procedure, to include information relating to a state of said nodes during the initial stages of the procedure;

means for setting parameters in the procedure for device discovery to achieve a separation of the nodes into those in a transmit-state and a receive-state;

means for defining a Master-designate among said nodes through a statistical procedure and defining remaining nodes as a Slave-designate; and

means for defining a cluster including said Master-designate and at least one said Slave-designate, wherein said Slave-designate continuously scans for an inquiry message transmitted from said Master-designate and said Slave-designate transmits an inquiry response to said Master-designate upon receiving said inquiry message to establish a connection between said Master-designate and said Slave-designate,

wherein at least one Super-master-designate is selected from said Master-designates and at least one Proxy-Slave is selected for each Master-designate, and

wherein said statistical procedure includes Bernoulli trials executed by each node.

14. (Original) The system according to the claim 8, wherein said wireless transmission system is a Bluetooth System.

15. (Currently Amended) The system according to the claim 14, wherein nodes which are connected as slaves in a piconet ~~carrying~~ carry on a node discovery on behalf or in addition to said Master-designate such that a piconet/scatternet for the Bluetooth system is formed.

16-18. (Canceled)

19. (Currently Amended) A computer program product having a computer readable medium having a computer program recorded therein for organizing a set of nodes into a minimum number of connected clusters of bounded size in a wireless transmission system, said computer program product including:

computer program code means for using of bits in packets used in ~~an~~ initial stages of a device discovery procedure, to include information relating to a state of said nodes during the

initial stages of the procedure;

computer program code means for setting parameters in the procedure for device discovery to achieve a separation of the nodes into those in a transmit-state and a receive-state;

computer program code means for defining a Master-designate among said nodes through a statistical procedure and defining remaining nodes as ~~a Slave-designate~~ Slave-designates; and

computer program code means for defining a cluster including said Master-designate and at least one said Slave-designate, wherein said Slave-designate continuously scans for an inquiry message transmitted from said Master-designate and said Slave-designate transmits an inquiry response to said Master-designate upon receiving said inquiry message to establish a connection between said Master-designate and said Slave-designate,

wherein at least one Super-master-designate is selected from said ~~Master-designate~~ Master-designates and at least one Proxy-Slave is selected for each Master-designate.

20. (Currently Amended) A computer program product having a computer readable medium having a computer program recorded therein for organizing a set of nodes into a minimum number of connected clusters of bounded size in a wireless transmission system, said computer program product including:

computer program code means for using of bits in packets used in ~~an~~ initial stages of a device discovery procedure, to include information relating to a state of said nodes during the initial stages of the procedure;

computer program code means for setting parameters in the procedure for device discovery to achieve a separation of the nodes into those in a transmit-state and a receive-state;

computer program code means for defining a Master-designate among said nodes through a statistical procedure and defining remaining nodes as ~~a Slave-designate~~ Slave-designates; and

(304) sending the network address associated with a virtual subnet (302) to the network device (100) in response to the address server (200) receiving the address server query message (602).

Karaoguz teaches techniques for controlling and managing network access are used to enable a wireless communication device to selectively communicate with several wireless networks. A portable communication device constructed according to the invention can communicate with different networks as the device is moved through the areas of coverage supported by the different networks. As a result, the device can take advantage of services provided by a particular network when the device is within the area of coverage provided by that network. Thus, the device can selectively switch to networks that provide, for example, high speed Internet access, different quality of service, low cost service and/or different services (e.g., voice, data, multimedia, etc.). A multi-mode controller in the device may be used to alternately poll different networks to determine whether the device is within the area of coverage of a network and to selectively establish communications with those networks.

Mitra teaches a method for solving the joint problem of optimal routing and optimal bandwidth allocation in a network that supports plural subnetworks and plural communication services. Mitra involves, for each source-destination pair communicating via a given subnetwork and a given class of service, determining a traffic rate to be offered to each of a set of permissible routes between that source and that destination, in the given subnetwork and service class. Mitra further involves allocating a respective bandwidth to each link of each subnetwork. Significantly, the determinations of traffic rate to be offered, and the allocations of bandwidth to respective links of subnetworks, are performed in a mutually responsive manner.

However, Callaway, Ray, Karaoguz, nor Mitra teach "wherein at least one Super-master-designate is selected from said Master-designate and at least one Proxy-Slave is selected for each

Master-designate," as provided by amended independent claims 4, 6, 11, 13, 22, and 24. In fact, there is no suggestion in any of Callaway, Ray, Karaoguz, or Mitra of this particular manner of defining the Super-master designate, which is different from the mere master node(s) defined in Callaway. Specifically, the claimed invention uses a deterministic methodology to decide on the final set of masters and slaves so as to efficiently assign slaves to masters. Thereafter, a "Super-master" is elected, which is required for counting the actual number of masters and for collecting information about all the nodes. This aspect of the claimed invention also corrects the effect of the randomness introduced in the previous stage of the method according to the invention, whereby the election of the Super-Master may be interleaved with the cluster formation, thereby enhancing communication speed of the ad hoc network formation. This "Super-master" node formation is a novel aspect of the claimed invention, which the prior art of record is silent on.

Furthermore, even if each of Callaway, Ray, and Karaoguz; and Callaway, Ray, and Mitra were legally combinable, they would still fail to teach the novel aspects of the invention. The invention provides a much more streamlined approach and a simpler concept than the proposed combination of Callaway, Ray, and Karaoguz; and Callaway, Ray, and Mitra. Therefore, the invention is different from Callaway, Ray, and Karaoguz; and Callaway, Ray, and Mitra, whether alone or in combination with one another, and moreover, the invention is unobvious in light of the restrictive teachings of Callaway, Ray, Karaoguz, and Mitra.

As such, independent claims 4, 6, 11, 13, 22, and 24 are amended herein to further describe the invention and to further distinguish the invention from the cited prior art of record. Moreover, the Applicants note that all claims are properly supported in the specification and accompanying drawings, and no new matter is being added.

Therefore, Applicants respectfully submit that the cited prior art do not teach or suggest

the features defined by amended independent claims 4, 6, 11, 13, 22, and 24 and as such, claims 4, 6, 11, 13, 22, and 24 are patentable over Callaway, Ray, Karaoguz, and Mitra, alone or in combination with one another. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections.

IV. Formal Matters and Conclusion

With respect to the objections to the specifications and claims, the specification and claims have been amended, above, to overcome these objections. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the objections to the specification and claims.

In view of the foregoing, Applicants submit that claims 1-15 and 19-25, all the claims presently pending in the application, are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary.

Please charge any deficiencies and credit any overpayments to Attorney's Deposit Account Number 09-0441.

Respectfully submitted,

Dated: 6/24/04

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